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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,442	06/11/2001	Vincent Dubois	MXI-321CP	3549

59819 7590 09/07/2007

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EXAMINER	
KOSAR, ANDREW D	
ART UNIT	PAPER NUMBER
1654	

MAIL DATE	DELIVERY MODE
09/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/879,442	DUBOIS ET AL.	
	Examiner	Art Unit	
	Andrew D. Kosar	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5-21,23-30,37,118-120 and 122-134* is/are pending in the application.

4a) Of the above claim(s) *13-17,20,21,24,25,27,125,127,132 and 133* is/are withdrawn from consideration.

5)☒ Claim(s) *28,119 and 120* is/are allowed.

6)☒ Claim(s) *2,3,5-12,18,19,23,26,29,30,37,122-124,126,128-131 and 134* is/are rejected.

7)☒ Claim(s) *118* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 18, 2007 has been entered.

Response to Amendments/Arguments

Applicant's amendments and arguments filed June 18, 2007 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed is/are herein withdrawn.

The declaration of Dr. Gangwar filed under 37 CFR 1.132 filed June 18, 2007 is sufficient to overcome the 35 USC § 103(a) rejection and Obviousness Double Patenting rejection based upon Trouet in view of Li, Guthiel, LaRochelle and/or Hall, with regards to the compound Suc-βAla-Leu-Ala-Leu-[therapeutic]. With regards to the broader class of 'negatively charged stabilizing group', Applicant's declaration is insufficient to overcome any rejection which may be made in the future (as none is currently of record to the broader aspect of the claims), as it merely presents opinion without any objective evidence.

The examiner extended the search within the genus as set forth below. The species within the genus identified by the examiner does not read upon claims 13-17, 20, 21, 24, 25, 27, 125, 127, 132 and 133, therefore these claims are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention/species, there being no allowable

generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on August 24, 2004.

Allowable Subject Matter

Claims 28, 119 and 120 are allowed.

Claim 118 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Applicant's Declaration under 37 CFR 1.132, above, provides that at the time of the previous invention the peptide βAla-Leu-Ala-Leu was thought to be stable, and thus would not have required further stabilization as provided by the negatively charged group, e.g. Suc.

Claim Objections

Claims 3, 6-12, 23, 29 and 122-124 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims do not further limit the compound claim from which they depend, but rather describe the target cell, TOP or inherent properties of the compound without further providing structural limitations on the compound.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 3, 5-12, 18, 19, 23, 26, 29, 30, 122, 123, 126, 128, 129 and 134 are rejected under 35 U.S.C. 102(b) as being anticipated by KANIA (R.S. Kania *et al.* J. Am. Chem. Soc. (1994) 116(19), pages 8835-8836).

The instant claims are generally drawn to peptide-therapeutic conjugates where the conjugate has an N-terminal negatively charged stabilizing group, e.g. Succinic acid, attached at the N-terminus of a non-standard amino acid, e.g. βAla, coupled to three amino acids of any structure, coupled either to a linker or directly to a therapeutic agent.

Kania teaches the compound Suc-βAla-dPhe-Orn-Asp-Ile-Ile-Trp. Here, the compound of Kania meets the instant claims limitations being parsed as follows: Suc- negatively charged stabilizing group; βAla – AA^4: dPhe – AA^3; Orn – AA^2; Asp – AA^1. AA^{1-3} are 'any amino acid', as required. The therapeutic is either Ile-Ile-Trp or Trp connected through an Ile-Ile linker group, depending on how one would choose to parse the compound. Trp and the tripeptide Ile-Ile-Trp are 'capable of entering a target cell' and are considered therapeutics since they provide amino acids, the basic building blocks of proteins, and Trp is well known for inducing sleepiness. Because the structural limitations are met, the functional limitations of the compound, e.g. hindering cleavage, reducing toxicity, etc., are necessarily present.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 3, 5-12, 18, 19, 23, 26, 29, 30, 37, 122-124, 126, 128-131 and 134 are rejected under 35 U.S.C. 103(a) as being unpatentable over KANIA, *supra*.

The instant claims are presented *supra* and are further drawn to the compound being in a pharmaceutical composition with a pharmaceutical carrier.

The teachings of Kania are presented *supra*. Kania discusses drug discovery methods and screening from libraries (e.g. 1st paragraph, page 8835) as well as the biological availability of the peptide for bead screening (page 8835).

It would have been obvious to have placed the peptide in a pharmaceutical composition/carrier to further study the *in vivo* effectiveness of the synthesized peptides and for comparison of the linear/cyclic peptides. One would have been motivated to have formulated the peptides for *in vivo* usage, as the purpose of drug discovery is to develop and design new and useful pharmaceutical, and thus one would study their *in vitro* and *in vivo* effectiveness. One would have had a reasonable expectation for success in making the pharmaceutical

compositions, as formulation of peptides with acceptable carriers is notoriously well known and widely practiced in the medicinal and peptide arts.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. WO 98/21243 A1 teaches suberic acid amino pentanoic acid conjugates to neuraminidase inhibitors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew D. Kosar whose telephone number is (571)272-0913. The examiner can normally be reached on Monday - Friday 08:00 - 16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia J. Tsang can be reached on (571)272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew D Kosar
Patent Examiner, Art Unit 1654